



Information retrieval from INIS magnetic tapes

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August 1973



Information Retrieval from INIS Magnetic Tapes

by

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Title and author(s) Information Retrieval from INIS Magnetic Tapes by Birgit Pedersen	Date August 1973
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22 pages + tables + illustrations	Copies to
<p>Abstract</p> <p>For a trial period of about one year, beginning August 1973, information retrieval from the magnetic tapes of the International Nuclear Information System (INIS) is offered to the scientists of the Danish Atomic Energy Commission Research Establishment. Searches can be based either on bibliographic items such as author, title, subject category, language, or on the information content represented by descriptors, or on a combination of the two. The actual searches are carried out by I/S Datacentralen, Copenhagen, who have developed computer programs, called TELETEXT, for SDI-searches. Instructions are given on how to construct search profiles.</p> <p>Available on request from the Library of the Danish Atomic Energy Commission (Atomenergikommissionens Bibliotek), Risø, DK-4000 Roskilde, Denmark Telephone: (03) 35 51 01, ext. 334, telex: 43116</p>	

INIS Descriptors:

DENMARK

INFORMATION RETRIEVAL

INIS

ISBN 87 550 0215 3

What is INIS?

INIS - the International Nuclear Information System - has been established to serve the information needs of the world's nuclear scientists and technologists. Records of newly published literature in the nuclear field are prepared for input in national and regional centres. These records are sent to the International Atomic Energy Agency (IAEA) in Vienna, where they are processed by an electronic computer and merged to create a master file. It is expected that about 80,000 items will be recorded every year.

The INIS file contains a detailed bibliographic description of each piece of literature and a set of keywords (in the following called descriptors) which indicate the subject content of the document.

The library of the Danish Atomic Energy Commission subscribes to the printed version of the system, called INIS Atomindex. However, the INIS Magnetic Tapes are the most important product of the system, as these magnetic tapes enable scientists to have specific literature searches made in a quick and easy way. The library has therefore decided to run the INIS Magnetic Tapes for a trial period of about one year. Scientists at Risø are thus offered the possibility of having literature searches made every month on the newest INIS tapes received from Vienna. Searches can be based either on bibliographic items such as author or title or on the information content represented by the descriptors, or on a combination of the two. The answers will be delivered in the form of reference lists (see Appendix IV). The actual searches will be carried out by I/S Datacentralen, who have developed computer programs for SDI* -searches. These programs, called TELETEXT, have for some years been used for information retrieval from Chemical Titles and Chemical Abstracts Condensates tapes, and will now be used for retrieval from the INIS Magnetic Tapes, too.

Scientists who have literature searches made will be asked to give their comments upon the search result.

The amount of information describing the individual references is illustrated below (figs. 1a and 1b):

* SDI = Selective Dissemination of Information

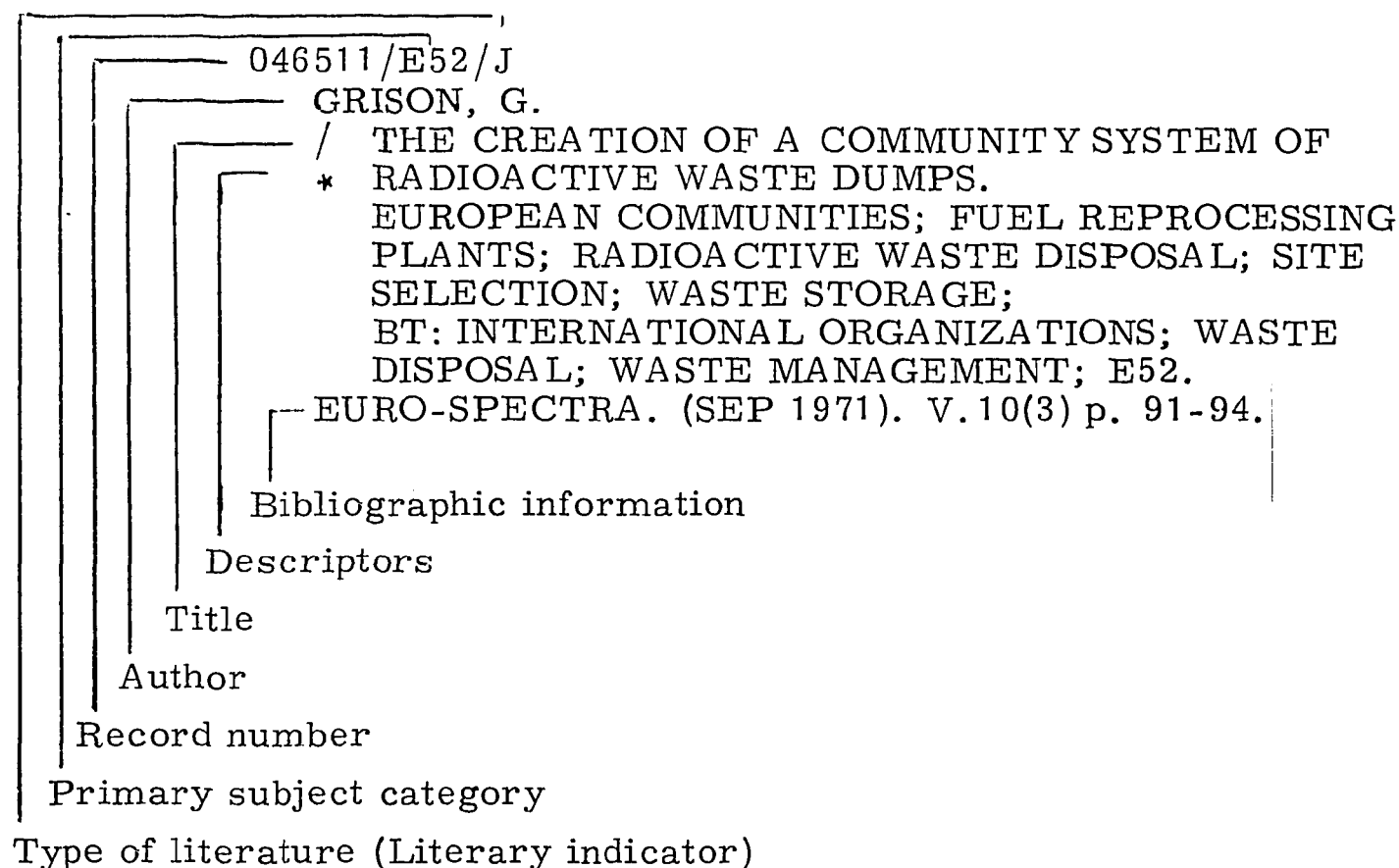
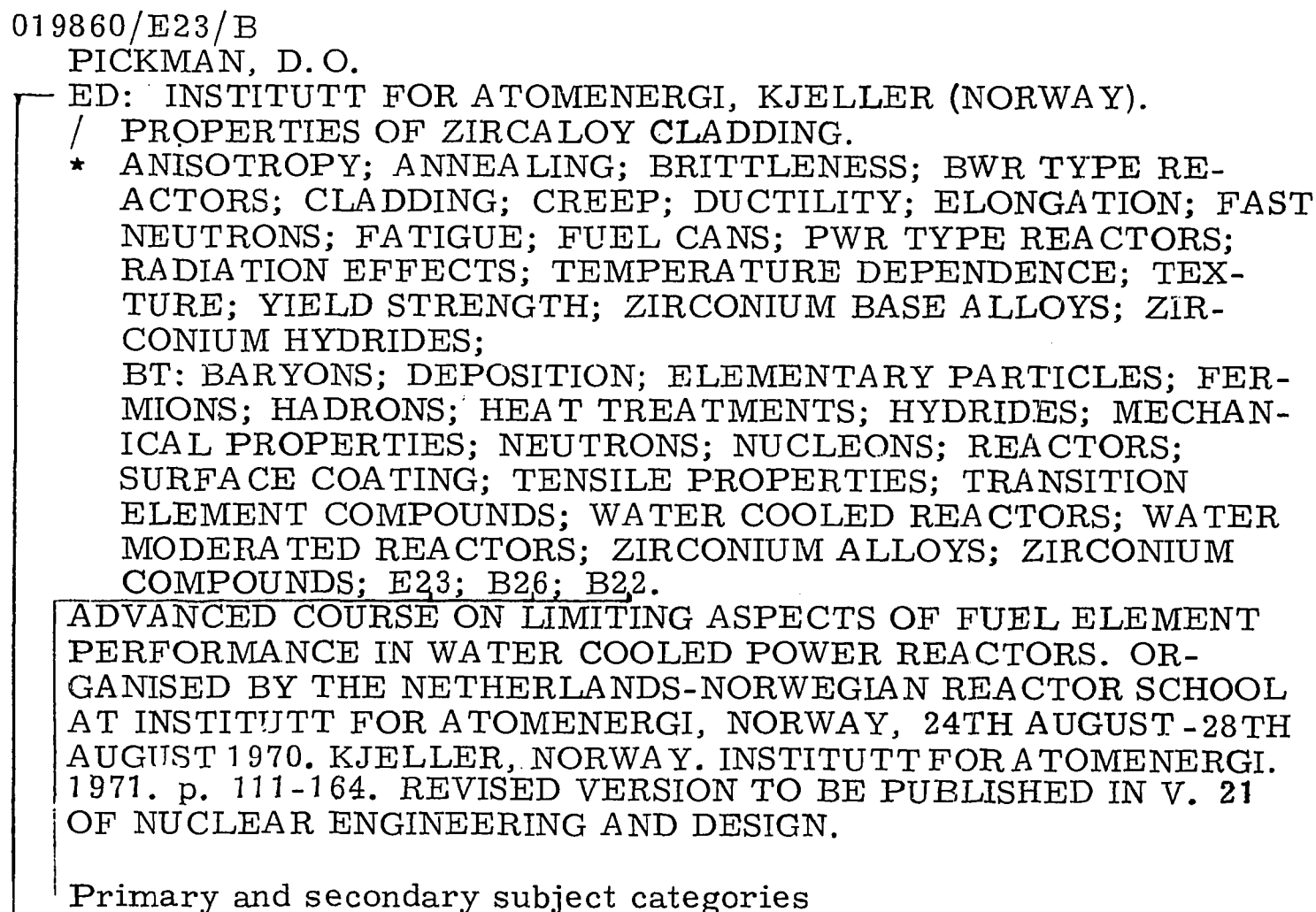


Fig. 1a.



Editor

Fig. 1b.

Construction of a Search Profile

The user may construct the search profile himself, but normally the best retrieval result will be achieved when the profile is formulated jointly by the user as the subject specialist and the librarian having the best knowledge of the construction of the INIS system and of the search technique.

The actual search profile is formulated by means of a query form, p.4. In the following the construction of a search profile is illustrated by treating each of the columns in the query form separately.

TELETEXT/BATCH SEARCH QUERY

User return address	Date	Reserved computer center Job no: 16 10 003
		Made ready to process by:

Identification card

Query no.	★ Database		Update code	Printout					Weight limit	★ IN = INTERNATIONAL NUCLEAR INFORMATION SYSTEM	
				Term list	Skip PQRU	0 5	In-dex				
1	4	6	7	8	9	10	11	12	13	14	17
		I N									

User printout heading (max. 43 char.)

Printout limits				
Max.	Factor			
72	75	77		N

Term cards (col. 1-4 duplicate query no.)

[illegible]

☐ Continuation of query no.: _____

INSTRUCTIONS

TELETEXT/BATCH SEARCH QUERY

The short instructions below should help new users in filling in the query form and understanding the search process.

Identification card	This is the header card of each query. Normally it is not filled in by the user.																				
Col. 1-4, Query no.	Must be filled in when the form is used for updating an existing query. New queries are given an individual number by the library.																				
Col. 8, Update code	0: for a new query. 1: when replacing an older query with the same query no. 2: when deleting a query (form need then only be filled in with query no.). 3: for a new query which is to be run only once. 9: when the form is used for modifying an existing query.																				
Col. 9, Term List	0: the search terms are listed on the print-out. 1: the search terms are not listed. In connection with changes in the profile the user is supplied with a separate term list.																				
Col. 10-12, Printout code	Blank: All information about the individual ref. contained on the tape is printed out. P in col. 10 or 11: corporate author is not printed out. Q in col. 10 or 11: the title of the ref. is not printed out. R in col. 10 or 11: the descriptors are not printed out. U in col. 10 or 11: computer-assigned descriptors are not printed out. S in col. 12: only identification and weight of the ref. is printed out.																				
Col. 13, Author Index	0: no author index is printed. 1: the list of answers is followed by an alphabetic author index.																				
Col. 14-17, Weight limit	Optional positive number. Hits with total weight lower than the limit are not printed out.																				
Col. 18-60, Personal user printout heading	User-identification.																				
Col. 72-75 and 77-80, Printouts limits	Optional number with up to 4 digits. Example: max = 20, factor = 10 means that the first 20 hits will be printed out in full text. Weight and abstract no. of the remaining will be printed (3 per line) until a maximum of $20 \times 10 = 200$ hits (incl. the first 20).																				
Term cards																					
Col. 5, Logical group	A, B, Cor N. Hits will contain at least one A-term and one B-term and one C-term etc.,but none of the N-terms.																				
Col. 6, Search code	<table> <thead> <tr> <th>Code</th><th>Searched element</th></tr> </thead> <tbody> <tr> <td>A</td><td>Author</td></tr> <tr> <td>C</td><td>Reference number</td></tr> <tr> <td>D</td><td>Primary subject category</td></tr> <tr> <td>E</td><td>Type of record</td></tr> <tr> <td>P</td><td>Corporate author</td></tr> <tr> <td>Q</td><td>Title, literary indicator and language is searched</td></tr> <tr> <td>R</td><td>Descriptors and all subject categories are searched</td></tr> <tr> <td>S (=Q+R)</td><td>Title, literary indicator, language, descriptors and subject cat. are searched</td></tr> <tr> <td>T</td><td>Same elements as search code S, but with cumulative weight for the terms.</td></tr> </tbody> </table>	Code	Searched element	A	Author	C	Reference number	D	Primary subject category	E	Type of record	P	Corporate author	Q	Title, literary indicator and language is searched	R	Descriptors and all subject categories are searched	S (=Q+R)	Title, literary indicator, language, descriptors and subject cat. are searched	T	Same elements as search code S, but with cumulative weight for the terms.
Code	Searched element																				
A	Author																				
C	Reference number																				
D	Primary subject category																				
E	Type of record																				
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R	Descriptors and all subject categories are searched																				
S (=Q+R)	Title, literary indicator, language, descriptors and subject cat. are searched																				
T	Same elements as search code S, but with cumulative weight for the terms.																				
Col. 7, Truncation	◀ 1 = Retrieves the term preceded by any combination of characters. ▶ 2 = Retrieves the term followed by any combination of characters. ≡ 3 = Retrieves the term only if bounded by blank spaces, or punctuation. ↔ 4 = Retrieves the term within any string of characters.																				
Col. 8-10, Term Weight	Optional number between -99 and 999. Blank is read as 0.																				
Col. 11-70, Term	The user may choose any word, word-stem or string of words as search term.																				
Col. 71, Term Updating	0: the term is added. 1: changes in col. 5-10; the term as such remains unchanged. 2: the term is deleted.																				

Term Cards

From the user's point of view the term cards are the most important part of the query form, and we shall therefore treat these first.

Col. 5 Search profiles are constructed according to the so-called AND/OR/NOT logic which requires that a reference to be retrieved must contain at least one term from each of the groups (A, B, C, etc.) in the profile, but not the terms which the user may have placed in a NOT group. It should be indicated whether a search term belongs to an A group, a B group ..., or a NOT group, by writing A, B ..., N in column 5. The simplest form of a profile consists of one group, A, containing one search term (ex. 1):

Ex 1

Term cards (col. 1-4 duplicate query no.)

A B C . . N	R S A D . . .	1 2 3 4	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)	0 add 1 repl. 2 del.
A				RESEARCH REACTORS	

This profile retrieves all references about research reactors.

Normally a query consisting of only one group, A, retrieves too many references. The search may therefore be restricted to certain aspects in connection with the term(s) in the A group. If, e.g., you only want to receive references concerning irradiation tests made in a research reactor, you add a B group consisting of for instance the term IRRADIATION PROCEDURES. You may have as many search terms in each group as you want. The computer will "read" an OR between each term within a group.

Ex. 2

Term cards (col. 1-4 duplicate query no.)

A B C . . N	R S A D . . .	1 2 3 4	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)	0 add 1 repl. 2 del.
A				RESEARCH REACTORS	
B				IRRADIATION PROCEDURES	

Another way of reducing the number of unwanted answers is to insert a NOT parameter, which will exclude all references containing the NOT terms (ex. 3):

Ex. 3

Term cards (col. 1-4 duplicate query no.)

A B C . . N	R S A D . . .	1 2 3 4	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)	0 add 1 repl. 2 del.
5	6	7	8	10 11	70 71
A				RESEARCH REACTORS	
B				IRRADIATION PROCEDURES	
N				GAMMA RADIATION	

Col. 6 In this column you indicate in which part of the reference the term(s) should be searched for:

- A is used for personal author and personal editor
- D - - - primary subject category
- E - - - type of record
- P - - - corporate author, corporate editor, patent assignee
- Q - - - title, literary indicator, language
- R - - - descriptors and all subject categories
- S - - - title, literary indicator, language, descriptors, and all subject categories
- T - - like search code S, but with cumulative weight for the individual terms.

(More information about search terms is given in the description of col. 11-70).

Examples 4 and 5 illustrate that various types of search terms can be combined in one search profile:

Ex. 4

Term cards (col. 1-4 duplicate query no.)

A B C . . N	R S A D . . .	1 2 3 4	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)	0=add. 1=repl. 2=del.
5	6	7	8	10 11	70 71
A	A			EKSTROEM, C.	
B	R			NUCLEAR MAGNETIC MOMENTS	
C	R			ERBIUM 161	
C	R			ERBIUM 163	

This profile retrieves all references concerning nuclear magnetic moments of ^{161}Er and ^{163}Er written by C. Ekström.

Ex. 5

Term cards (col. 1-4 duplicate query no.)

A B C	R S A D	1 2 3 4	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)	0 1 2 3 4 5 6 7 8 9 10 11
A	P			COMMISSION OF EUROPEAN COMMUNITIES	
B	R			RADIOACTIVE WASTE PROCESSING	
B	R			RADIOACTIVE WASTE DISPOSAL	
N	Q			(IN FRENCH)	

According to ex. 6 all literature concerning processing and disposal of radioactive wastes, published by the European Communities and not written in French, will be retrieved.

Col. 7 Search terms can be words, word stems, or phrases.

- Code 1 (\leftarrow) retrieves the term preceded by any combination of characters
- 2 (\rightarrow) - - - followed - - -
 - 3 (\leftarrow) - - - only if it is bounded by blank spaces or punctuation
 - 4 (\leftrightarrow) - - - within any string of characters

Codes 1 and 4 must not be used when authors are searched for.

Ex. 6

Term cards (col. 1-4 duplicate query no.)

A B C	R S A D	1 2 3 4	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)	0 1 2 3 4 5 6 7 8 9 10 11
A	S	1		ISOTOPE	
A	S	2		ISOTOPE	
A	S	3		ISOTOPE	
A	S	4		ISOTOPE	

retrieves

- ISOTOPE
- RADIOISOTOPE
- ISOTOPE
- ISOTOPES
- ISOTOPE
- ISOTOPE
- RADIOISOTOPE
- ISOTOPES
- RADIOISOTOPES

Ex. 7

5	6	7	8	9	10	11
A	S	4			ISOTOP	

retrieves also ISOTOPIC

Col. 8-10

These columns are only used in connection with weighted profiles. The computer will calculate the total weight of a reference by cumulating the weight of the individual search terms. The computer sorts the references according to their total weight, and the weight can therefore be used as a means of sorting the answers. If a weight limit is indicated in column 14-17 of the identification card, only references with a total of \geq the weight limit will be printed out.

Ex. 8

Identification card

Query no.	Database	Update code	Printout				Weight limit	★ IN = INTERNATIONAL NUCLEAR INFORMATION SYSTEM															
			Term lim	Skip PQRU	0 5	In- dex																	
1	4	6	7	8	9	10	11	12	13	14	17												
		I	N							100													
User printout heading (max. 43 char.)																							
<table border="1"> <tr> <th colspan="4">Printout limits</th> </tr> <tr> <th>Max.</th> <th colspan="3">Factor</th> </tr> <tr> <td>60</td> <td>72</td> <td>75</td> <td>77</td> <td>80</td> </tr> </table>											Printout limits				Max.	Factor			60	72	75	77	80
Printout limits																							
Max.	Factor																						
60	72	75	77	80																			

Term cards (col. 1-4 duplicate query no.)

A B C . . . N	R S A D . . .	<div>1 2 3 4</div>	Term weight	Search term (character string to be matched text in searched data base, max. 60 character)							0=add. 1=repl. 2=del.
5	6	7	8	10	11					70	71
A	S	3	30	PRESTRESSED CONCRETE							
B	S	3	30	PRESSURE VESSELS							
C	S	3	40	SHEAR PROPERTIES							
C	S	3	40	SHEAR							
C	S	3	40	FAILURES							
C	S	3	30	STRESS ANALYSIS							
C	S	3	10	SLABS							
C	S	3	10	PLATES							

Since this profile was given a weight limit of 100, and since at least one search term from each group (A, B, and C) should be present, only documents indexed with (PRESSURE VESSELS) and (PRESTRESSED CONCRETE) and either (SHEAR PROPERTIES) or (SHEAR) or (FAILURES) or (STRESS ANALYSIS and (SLABS or PLATES)) will be printed out.

Ex. 9 is a reference printed out as an answer to the profile above.

Ex. 9

034086/B24/R WEIGHT=0220
KARLSSON, B.I.
ILLINOIS UNIV., URBANA (USA)
/ SHEAR STRENGTH OF END SLABS WITH AND WITHOUT
PENETRATIONS IN PRESTRESSED CONCRETE REACTOR
VESSELS. (THESIS)
* DEFORMATION: EQUATIONS; FAILURES; OPENINGS;
PRESSURE DEPENDENCE; PRESSURE VESSELS; PRESTRESSED
CONCRETE; REACTORS; SHEAR PROPERTIES; STRESS ANALYSIS;
TESTING;
BT: BUILDING MATERIALS; CONCRETES; CONTAINERS;
MECHANICAL PROPERTIES. B24
1971. 388 P. UNIVERSITY MICROFILMS ORDER NO. 72-12, 237

If in col. 6 the code T had been used instead of code S (i.e. cumulative weight instead of non-cumulative), references like the following would have been retrieved (the weight of STRESS ANALYSIS has been counted twice):

Ex. 10

043752/E22/J WEIGHT=120
OHTANI, NOBUO NAGATO, KOTARO
/ STRESS ANALYSIS FOR PCPV LINERS. (IN JAPANESE)
* ASYMMETRY; COMPUTER CALCULATIONS; FOURIER ANALYSIS;
MATRICES; MATRIX ELEMENTS; OPENINGS; PRESSURE VESSELS;
PRESTRESSED CONCRETE; STRAINS; STRESS ANALYSIS; SYMMETRY;
TRANSFER FUNCTIONS;
BT: BUILDING MATERIALS; CONCRETES; CONTAINERS; FUNCTIONS;
E22
FAPIG (TOKYO). (NOV. 71)(NO. 63). P. 152-155.

Col. 11-70

In these columns you write the actual search terms. As is shown under col. 6 you can search on almost any information in a reference. A search term may consist of up to 60 characters, including blanks, and may be:

a personal author (A in col. 6). Comprises also personal editor(s).

Author/editor names are written in inverted form, e. g. OLESEN, H. P.
ED: should be inserted before names of editors.

a corporate author (P in col. 6). Comprises also corporate editor(s) and patent assignee; might for example be BROOKHAVEN NATIONAL LAB., UPTON, N. Y. (USA). Consult the library for the authorized version of names of the organizations.

a descriptor (R, S, or T in col. 6). Every piece of literature has been assigned about 20 descriptors, of which on an average 10 are computer assigned, as they are broader terms to the descriptors assigned by the indexer. The descriptors are selected from a controlled vocabulary, the INIS Thesaurus, which contains about 12,000 descriptors related to each other by means of the expressions Broader Term (BT), Narrower Term (NT), Related Term (RT), Use (USE), Used For (UF).
(A page from the thesaurus is shown in Appendix I).

If for instance the descriptor REACTOR ACCIDENTS is used as a search term, documents indexed with this descriptor will be printed out, as well as documents indexed with the NT descriptors EXCURSIONS, LOSS OF COOLANT, MAXIMUM CREDIBLE ACCIDENT ... , as REACTOR ACCIDENTS is a broader term to EXCURSIONS, LOSS OF COOLANT...

When using a descriptor as a search term, you write an R in col. 6.
(For the use of S and T, see the last paragraph of the description of title word).

The descriptor part of a reference is searched as a free-text field, i. e. if you use the descriptor WATER as a search term, you will also have references indexed with WATER MODERATED REACTORS, WATER MODERATOR, WATER POLLUTION, etc. If you only want documents indexed with WATER, you must add a semicolon after the search term, i. e. WATER;

an editor See "personal author" and "corporate author".

a language indication (Q in col. 6). If a document is written in a language other than English, a language indication is given in parentheses right after the title, e. g. (IN DANISH). This information can be used as a search term. You can thus ask for literature on a certain subject and state that it should (or should not) be in, for example, French. (see ex. 5).

a literary indicator (Q in col. 6). If you are especially interested (or perhaps not interested) in one of the following kinds of literature, you may use the following abbreviations (with the parentheses) as search terms:

- (ABSTRACT) for literature published only as an abstract, short communication or letter-to-the-editor.
- (BIBLIOG.) for bibliographies or review articles with an extensive bibliography.
- (CONF.) for conference papers.
- (DICT.) for encyclopedias, dictionaries, and glossaries.
- (N. DATA) for literature which is mainly a presentation of numerical data.
- (PR. REPT.) for progress reports.
- (STAND.) for literature whose main topic is the definition of a standard or a specification.
- (THESIS) for theses and dissertations.

an organization. See "corporate author".

a patent assignee . See "corporate author".

a subject category (D or R in col. 6). Every piece of literature has been assigned a primary subject category, and some also secondary subject categories. If you are only interested in literature which has been assigned a certain subject category as primary subject category, you use this subject category as a search term, and D is written in col. 6. If it is of no importance to you whether the subject category of interest has been assigned as a primary or a secondary subject category, you write R in col. 6.

INIS subject categories are listed in Appendix II. Consult the library for a more detailed definition of the subject categories or consult the report IAEA-INIS-3 (newest ed.).

a title word (Q, S, or T in col. 6). It is the basic idea of INIS that information retrieval should be made by means of the descriptors assigned to every piece of literature. However, the best retrieval result is often obtained when descriptor search is combined with search on titles. This is due to the fact that even though the INIS thesaurus contains about 12,000 descriptors, it is not always possible to index a document as specifically as desirable. As the title of a document may contain a very specific expression for the idea of the document, retrieval from this part of the references is often successful. Every word or string of words in a title can be used as a search term.

When a term is to be searched for only in the titles, Q is written in col. 6. If the same term is also to be searched for in the descriptor part of the references, S is written in col. 6. - T is only used when the so-called weighting function is used in the search profile (see description of col. 8-10).

a letter indicating type of record (E in col. 6). A search term can be the

letter B for books

C - collections

D - photographs, engineering drawings

F - moving-picture films, slides, film strips

G - maps, atlases

H - sound recordings

J - journal articles

P - patents

R - reports

T - computer media, i. e. punched cards, paper tapes, magnetic tapes

Col. 71 This column is used for modifications and corrections of existing profiles. Consult the back of the query form for instructions p. 4a.

Identification Card

Normally the library and not the individual user will fill in this card. An exception is the weight limit (col. 14-17), which the user fills in himself (see description of col. 8-10 of the term cards).

The use of the different columns of the identification cards is described on the back of the query form (p. 4a).

For information about the build-up of the INIS system you may consult the INIS Reference Series presented in Appendix III.

Appendix I

REACTION HEAT

- NT1 combustion heat
- NT1 dissociation heat
- NT1 formation heat

REACTION KINETICS [437; 1,562]

- UF -activity coefficient
- UF -reaction mechanisms
- UF -reaction rate
- SE -mechanisms
- BT1 kinetics
- NT1 biochemical reaction kinetics
- NT1 chemical reaction kinetics
- NT1 nuclear reaction kinetics
- RT activation energy
- RT arrhenius equation
- RT dissociation
- RT equilibrium

-reaction mechanisms

- USE reaction kinetics

-reaction rate

- USE reaction kinetics

REACTIVITY [269; 270]

- NT1 reactivity insertions
- RT inhour equation
- RT pile oscillation techniques
- RT pile replacement techniques
- RT poisoning
- RT reactivity coefficients
- RT reactivity meters
- RT reactivity units
- RT reactivity worths
- RT reactor kinetics
- RT rod drop method

REACTIVITY COEFFICIENTS [42; 180]

- NT1 danger coefficient
- NT1 doppler coefficient
- NT1 power coefficient
- NT1 pressure coefficient
- NT1 temperature coefficient
- NT1 void coefficient
- RT reactivity
- RT reactivity insertions
- RT reactor kinetics

REACTIVITY INSERTIONS [1; 1]

- BT1 reactivity
- RT pulsed reactors
- RT reactivity coefficients
- RT reactivity units
- RT reactivity worths
- RT reactor kinetics

REACTIVITY METERS [11; 11]

- RT reactivity

REACTIVITY UNITS [0; 1]

- NT1 dollars
- NT1 inhours
- RT reactivity
- RT reactivity insertions

REACTIVITY WORTHS [70; 70]

- RT reactivity
- RT reactivity insertions

REACTOR ACCIDENTS [228; 419]

- BT1 accidents
- NT1 excursions
- NT1 loss of coolant
- NT1 maximum credible accident
- NT1 melt-down
- NT1 reactor core disruption
- RT burnout
- RT reactor operation
- RT reactor safety

-reactor argentin-0

- USE ra-0 reactor

-reactor argentin-1

- USE ra-1 reactor

-reactor argentin-2

- USE ra-2 reactor

-reactor argentin-3

- USE ra-3 reactor

REACTOR CELLS [47; 47]

- UF -cells (reactor)
- RT reactor lattices

REACTOR CHANNELS [42; 123]

- (Passage through the reactor.)
- UF -channels (reactor)
- BT1 reactor components
- NT1 beam holes
- NT1 experimental channels
- NT1 fuel channels

REACTOR CHARGING MACHINES [46; 46]

- UF -charging machines (reactor)
- UF -loading machines (reactor)
- BT1 reactor components
- RT reactor fueling
- RT remote handling

-reactor chemistry

- USE radiochemistry

REACTOR COMMISSIONING [27; 27]

- UF -commissioning (reactor)
- RT national control

REACTOR COMPONENTS [84; 2,597]

- NT1 burnable poisons
- NT1 control elements
- NT2 regulating rods
- NT2 scram rods
- NT2 shim rods
- NT1 control rod drives
- NT1 fuel elements
- NT2 annular fuel elements
- NT2 fuel pins
- NT2 fuel plates
- NT2 fuel rods
- NT3 hollow fuel rods
- NT2 fuel wires
- NT2 spent fuel elements
- NT1 reactor channels
- NT2 beam holes
- NT2 experimental channels
- NT2 fuel channels
- NT1 reactor charging machines
- NT1 reactor cooling systems
- NT2 direct cycle cooling systems
- NT2 dual cycle cooling systems
- NT2 integrated cooling systems
- NT2 primary coolant circuits
- NT2 secondary coolant circuits
- NT2 shrouds
- NT1 reactor cores
- NT2 coupled reactor cores
- NT1 reactor experimental facilities
- NT2 beam holes
- NT2 experimental channels
- NT2 in pile loops
- NT2 rabbit tubes
- NT1 reactor materials
- NT2 breeding blankets
- NT2 matrix materials
- NT2 nuclear fuels
- NT3 fuel slurries
- NT3 gas fuels
- NT3 liquid fuels
- NT4 fuel solutions
- NT4 liquid metal fuels
- NT4 molten salt fuels
- NT3 solid fuels
- NT4 alloy nuclear fuels
- NT4 dispersion nuclear fuels
- NT3 spent fuels
- NT4 spent fuel elements
- NT1 reactor safety fuses
- RT alarm systems
- RT containers
- RT containment
- RT control equipment
- RT cooling towers
- RT electrical equipment

REACTOR COMPONENTS

- RT electronic equipment
- RT fins
- RT heat exchangers
- RT jackets
- RT leak detectors
- RT pumps
- RT shielding materials
- RT shields
- RT sleeves
- RT spacers
- RT vanes

-reactor control rods

- USE control elements

REACTOR CONTROL SYSTEMS [253; 253]

(The processes and operations ensuring the control and safe running of a nuclear reactor.)

- UF -monitors (reactor)
- BT1 control systems
- RT automation
- RT burnable poisons
- RT configuration control
- RT control elements
- RT control rod drives
- RT fluid poison control
- RT neutron detectors
- RT neutron monitors
- RT on-line control systems
- RT reactor safety fuses
- RT thermocouples

-reactor control theory

- USE reactor kinetics

REACTOR COOLING SYSTEMS [418; 584]

- UF -cooling system (reactor)
- BT1 reactor components
- NT1 direct cycle cooling systems
- NT1 dual cycle cooling systems
- NT1 integrated cooling systems
- NT1 primary coolant circuits
- NT1 secondary coolant circuits
- NT1 shrouds
- RT blowers
- RT boilers
- RT bypasses
- RT compressors
- RT coolants
- RT cooling
- RT demineralizers
- RT economizers
- RT feedwater heaters
- RT fluid flow
- RT heat exchangers
- RT heat transfer
- RT hot channel
- RT hot spots
- RT loss of coolant
- RT pressure tubes
- RT pressurizers
- RT pumps
- RT recombiners
- RT steam condensers
- RT steam generators
- RT steam jet ejectors
- RT steam separators
- RT steam turbines
- RT superheaters
- RT tubes
- RT valves
- RT vapor generators

→ REACTOR CORE DISRUPTION [0; 0]

- BT1 reactor accidents
- BT2 accidents
- RT reactor cores

REACTOR CORES [655; 673]

- UF -cores (reactor)
- BT1 reactor components
- NT1 coupled reactor cores
- RT control elements
- RT fuel assemblies
- RT fuel elements
- RT in core instruments

Appendix II

A00	<u>PHYSICAL SCIENCES</u>
A10	GENERAL PHYSICS
A11	Mathematical and General Theoretical Physics
A12	Atomic and Molecular Physics
A13	Solid-State and Fluid Physics
A14	Plasma Physics and Thermonuclear Reactions
A15	Astrophysics and Cosmology, Cosmic Radiation
A16	Direct Energy Conversion
A17	Low-Temperature Physics
A20	HIGH ENERGY PHYSICS
A21	Elementary Particles (Theory)
A22	Elementary Particles (Experimental)
A30	NEUTRON AND NUCLEAR PHYSICS
A31	Neutron Physics
A32	Radiation Physics
A33	Nuclear Theory
A34	Nuclear Properties and Reactions
B00	<u>CHEMISTRY, MATERIALS AND EARTH SCIENCES</u>
B10	CHEMISTRY
B11	Chemical and Isotopic Analysis
B12	Inorganic, Organic and Physical Chemistry
B13	Radiochemistry and Nuclear Chemistry
B14	Radiation Chemistry
B15	Corrosion
B16	Fuel Processing and Reprocessing
B20	MATERIALS
B21	Metals and Alloys (Production and Fabrication)
B22	Metals and Alloys (Physical Properties and Structure)
B23	Ceramics and Cermets
B24	Other Materials
B25	Radiation Effects on Physical Properties of Materials
B30	EARTH SCIENCES

Appendix II

- B31 Land
- B32 Water
- B33 Atmosphere
- C00 LIFE SCIENCES
- C10 ALL EFFECTS AND VARIOUS ASPECTS OF EXTERNAL RADIATION IN BIOLOGY
 - C11 Effects of External Radiation on Biochemicals and Cell and Tissue Cultures
 - C12 Effects of External Radiation on Microorganisms
 - C13 Effects of External Radiation on Plants
 - C14 Effects of External Radiation on Animals
 - C15 Effects of External Radiation on Man
- C20 RADIONUCLIDE EFFECTS AND KINETICS
 - C21 Toxicology, Tissue Distribution, Metabolism and Removal of Radionuclides
 - C22 Radionuclide Ecology
- C30 TRACER STUDIES IN LIFE SCIENCES
 - C31 Novel Tracer Techniques
- C40 APPLIED LIFE SCIENCES
 - C41 Plant Cultivation and Breeding
 - C42 Pest and Disease Control
 - C43 Food Protection and Preservation
 - C44 Animal Husbandry
 - C45 Other Applications of Radiations and Radioisotopes in the Life Sciences
- C50 HEALTH, SAFETY AND ENVIRONMENT
 - C51 Radiation Hazards
 - C52 Safety Evaluations and Environmental Aspects of Nuclear Installations
 - C53 Radiation Protection Standards
 - C54 Radiation Protection Procedures

Appendix II

D000	<u>ISOTOPES, ISOTOPE AND RADIATION APPLICATIONS</u>
D10	ISOTOPES AND RADIATION SOURCES
D11	Production of Enriched Uranium
D12	Production of Heavy Water
D13	Other Isotope Production and Enrichment
D14	Radiation Sources
D15	Radiation Source Metrology
D20	ISOTOPE AND RADIATION APPLICATIONS
D21	Power Production
D22	Industrial Applications, Radiometric
D23	Industrial Applications, Radiation Processing
D24	Tracer Techniques
E00	<u>ENGINEERING AND TECHNOLOGY</u>
E10	ENGINEERING
E11	Thermodynamics and Fluid Flow
E12	Cryogenics
E13	Structures and Equipment
E14	Nuclear Explosions
E15	Facilities for Handling of Radioactive Materials
E16	Accelerators (whether for Particle Research or not)
E17	Materials Testing
E20	NUCLEAR REACTORS (GENERAL)
E21	Reactor Theory and Calculation
E22	Reactor Components and Accessories
E23	Reactor Fuels
E24	Reactor Control Systems
E30	REACTOR TYPES
E31	Power Reactors, Non-Breeding, Light-Water Moderated, Boiling Water Cooled (BWR etc. types)
E32	Power Reactors, Non-Breeding, Light-Water Moderated, Non-Boiling Water Cooled (PWR etc. types)
E33	Power Reactors, Non-Breeding, Graphite-Moderated (GCR, AGR, HTGR etc. types)

Appendix II

- E34 Power Reactors, Non-Breeding, Otherwise Moderated or Unmoderated
- E35 Power Reactors, Breeding
- E36 Research and Test Reactors, including Experimental Reactors (Zero Power Reactors and Subcritical Assemblies) and Training Reactors
- E37 Production Reactors (Producing Fissionable Materials), Irradiation Reactors such as Chemonuclear Reactors, Isotope Production Reactors, Tritium Production Reactors, Materials Testing Reactors, Material Processing Reactors
- E38 Mobile, Propulsion, Transportable and Package Reactors
- E40 INSTRUMENTATION
- E41 Particle and Radiation Detection and Measuring Instruments and Methods
- E42 Other Nuclear Instrumentation and Methods of Measurement
- E43 Radiation Effects on Instruments, Components or Electronic Devices
- E50 WASTE MANAGEMENT
- E51 Waste Treatment
- E52 Waste Disposal
- F00 OTHER ASPECTS OF NUCLEAR ENERGY
- F10 ECONOMICS
- F11 Nuclear Power Economics
- F12 Reactor Fuel Economics
- F13 Economics of Isotope and Radiation Applications
- F20 NUCLEAR LAW
- F21 Radioactive Materials
- F22 Nuclear Installations
- F23 Radiation Health
- F24 Transport and Storage of Radioactive Materials
- F25 Liability for Nuclear Damage
- F26 Nuclear Ships and other Nuclear Means of Conveyance
- F27 Organization and Administration of Nuclear Activities
- F28 Nuclear Disarmament and Safeguards

F30	NUCLEAR DOCUMENTATION	Appendix II
F31	Data Handling	
F32	Literature Handling	
F40	SAFEGUARDS AND INSPECTION	
F41	Technical Aspects	
F42	Non-Technical Aspects	
F50	MATHEMATICAL METHODS AND COMPUTER CODES	
F51	Nuclear Computation and Simulation	
F60	MISCELLANEOUS	
F61	General Relevant Documents	
F62	Progress Reports	

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IAEA-INIS-1	INIS: Descriptive Cataloguing Rules
IAEA-INIS-2	INIS: Descriptive Cataloguing Samples
IAEA-INIS-3	INIS: Subject Categories and Scope Descriptions
IAEA-INIS-4	INIS: Instructions for Submitting Abstracts
IAEA-INIS-5	INIS: Terminology and Codes for Countries and International Organizations
IAEA-INIS-6	INIS: Authority List for Corporate Entries
IAEA-INIS-7	INIS: Magnetic and Punched Paper Tape Codes and Character Sets
IAEA-INIS-8	INIS: Paper Tape Specifications and Record Format
IAEA-INIS-9	INIS: Magnetic Tape Specifications and Record Format
IAEA-INIS-10	INIS: Transliteration Rules for Selected Non-Roman Characters
IAEA-INIS-11	INIS: Authority List for Journal Titles
IAEA-INIS-12	INIS: Manual for Indexing
IAEA-INIS-13	INIS: Thesaurus
IAEA-INIS-14	INIS: Description of Computer Programs
IAEA-INIS-15	INIS: Self-Training Manual for Descriptive Cataloguers

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SEARCH PROFILE	TERM FREQUENCY
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AR3 THERMAL ANALYSIS	28
AR3 HEAT TRANSFER	34
AR3 HYDRAULICS	4
AR3 FLUID FLOW	39
BR3 FUEL CHANNELS	3
BR3 FUEL ASSEMBLIES	10
BQ2 SUBCHANNEL	0

ANSWER TO PROFILE NO.0033 USERS OUTPUT LIMITS = 50/ 100

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EL-FOULY, M.F. RIZK, A.M. DARWISH, M.A.
ALI, S.E
ATOMIC ENERGY ESTABLISHMENT, INSHAS (EGYPT).
/ EXPERIMENTAL LOOP FOR CONDENSATION MEASUREMENTS ON
HORIZONTAL TUBE BUNDLE.
* FILM CONDENSATION; FUEL ELEMENT CLUSTERS; HEAT TRANSFER;
LAMINAR FLOW; REACTOR COOLING SYSTEMS; VAPOR
CONDENSATION;
BT: FLUID FLOW; FUEL ASSEMBLIES; REACTOR COMPONENTS. E22
AREAEE--154. 1972. 19 P.

065683/E22/P WEIGHT=0000
MUENCHOW, H.O
USAEC, WASHINGTON, D.C.
/ TRANSFER MACHINE FOR NUCLEAR REACTOR.
* COOLING; COST; ECONOMICS; FUEL ASSEMBLIES; HEAT
EXCHANGERS; HEAT TRANSFER; LIQUID METAL COOLED REACTORS;
MACHINE PARTS; PATENTS; REACTOR COOLING SYSTEMS; REACTOR
FUELING; USA;
BT: DOCUMENT TYPES; NORTH AMERICA; REACTOR COMPONENTS;
REACTORS. E22
US PATENT 3629062. 21 DEC 1971. 4 P. 5 FIGS., FILED 12 MAY
1969.

065708/E23/P WEIGHT=0000
MUELLER, R.A
GESELLSCHAFT FUER KERNFORSCHUNG M.B.H., KARLSRUHE (F.R.
GERMANY).
/ FUEL ELEMENT BUNDLE FOR NUCLEAR REACTORS.
* COOLANTS; DIAGRAMS; FUEL ELEMENT CLUSTERS; FUEL RODS;
LIQUID FLOW; PATENTS; REACTORS; USA;
BT: DOCUMENT TYPES; FLUID FLOW; FUEL ASSEMBLIES; FUEL
ELEMENTS; NORTH AMERICA; REACTOR COMPONENTS. E23
US PATENT 3658646. 25 APR 1972. 2 P. 4 FIGS., FILED 7 OCT
1968.

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MARKOCZY, G.

/ CONVECTIVE HEAT TRANSFER IN ROD CLUSTERS WITH TURBULENT
AXIAL COOLANT FLOW. P. 1. MEAN VALUES OVER THE ROD
PERIMETER. (IN GERMAN).

* COMPARATIVE EVALUATIONS; CONVECTION; COOLANTS; DATA;
DIMENSIONS; FUEL ELEMENT CLUSTERS; FUEL RODS; GEOMETRY;
HEAT EXCHANGERS; TURBULENT FLOW;
BT: FLUID FLOW; FUEL ASSEMBLIES; FUEL ELEMENTS; HEAT
TRANSFER; INFORMATION; MATHEMATICS; REACTOR COMPONENTS.

E11 E22 E23

WAERME STOFFUEBERTRAG. (1972). V. 5(4) P. 204-212. 14 FIGS.;
1 TAB.; 19 REFS.

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